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*Published to advance the Science of cold-blooded vertebrates*

## OCCURRENCE OF GROUND SHARKS, *CARCHARHINUS*, IN GREAT SOUTH BAY.

For the past fifteen years I have harpooned sharks in Great South Bay, Long Island, New York, and during that period there have been seen from my boat probably not less than twenty-five hundred between Lindenhurst and Great River on the north side of the Bay and Cedar Island and Cherry Grove on the south side. I think it is conservative to say that between three hundred and fifty and four hundred have been killed. The greatest number seen in any one year of which I have a record was 277 in 1916 and the greatest number killed was 60 in 1906. Not counting smaller Sand Sharks (*Carcharias taurus*)<sup>1</sup> those killed have been of two species, namely the Brown Shark (*Carcharhinus milberti*)<sup>1</sup> and the Dusky Shark (*Carcharhinus obscurus*)<sup>1</sup> with the single exception of a male *Carcharhinus limbatus*<sup>2</sup> taken July 14th, 1910. This fish, the longest I have ever secured, measured 9 ft. 2 in. and weighed 300 lbs. A single small Hammerhead (*Sphyrna zygaena*)<sup>1</sup> about 2½ ft. long was seen but not taken.

<sup>1</sup>Brooklyn Museum Science Bulletin, Vol 3, No. 1.

<sup>2</sup>Identified by J. T. Nichols after an examination of the jaws.

Beginning with the year 1911 careful records have been kept, during which time dates for the sharks seen range from June 17th to September 6th. It is my distinct remembrance that in a previous year I have killed them as late as September 15th. The sharks taken were *Carcharhinus*<sup>1</sup> and those noted as seen, with the exception of the small Hammerhead, were undoubtedly the same.

During the years from 1911 to 1916, inclusive, I went out on 123 occasions, frequently for a small portion of the day as weather conditions were unfavorable. About 1123 were seen, and 146 were taken. Of these 146 only 7 were males. The females taken were all *C. milberti*. Two of the males were *C. milberti* and measured 7 ft. and 6 ft. 6 in., the latter weighing 121 pounds, and 5 were *C. obscurus* which measured 8', 8' 2", 8' 5', 8' 3" 7' 8".

The 8' 2"	specimen weighed	275	lbs.
" 8' 5"	" "	322	"
" 8' 3"	" "	312	"
" 7' 8"	" "	250	"

The earliest any male was taken was August 3d, and the latest, August 29th.

The females ranged in length from 5' 4" to 7' 8".

A 6' 1"	specimen weighed	95	lbs.
" 6' 9"	" "	142	"
" 6' 9"	" "	125	"
" 6' 10"	" "	124	"
" 6' 11"	" "	125	"
" 7'	" "	136	"
" 7' 2"	" "	184	"

Eight of the females contained young and were taken from June 22d to August 5th. Eight was the smallest number and eleven the greatest number of young, and of a total of 75 young 31 were males and

44 females. The young when born are about 22 inches long and weigh  $2\frac{1}{2}$  lbs.

On one occasion when a female shark was suspended by the tail, three young dropped from her mouth one at a time, and swam off apparently unhurt. This is the only incident of the kind I have known. The same fish contained several unborn young. Young are sometimes born on deck, tail first, after the mother has been caught.

The principal diet of the sharks I have examined has been various bottom fish and an occasional weak fish, dog fish, eel or crab. Flat-fish very largely predominate. I have never found what could be identified as a blue fish, nor have I ever found anything except what is mentioned above in a shark's stomach, except two fish hooks with the snells attached, neither of which was imbedded and which were probably fast to some smaller fish which the shark had swallowed.

The greatest number of sharks I have ever taken on any one day was 17 on August 3d, 1905. Some of these, however, were Sand Sharks. On August 11th, 1906, fourteen Brown Sharks were taken. The greatest number seen in one day of which I have a record was 82, on August 14th, 1916, and of these 42 were in sight at one time. These were all seen in the morning before noon. On a previous occasion when I kept no record, my captain at the mast head said he thought he saw during the day, over three hundred. I would say a conservative estimate was two hundred as they were much more plentiful on that day than on the day that 82 were seen. They were so thick at times that it would have been impossible to count them with any degree of accuracy.

I have killed approximately as many on the ebb tide as on the flood.

EDWIN THORNE,  
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